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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,881	03/23/2004	Gregory Lee Brookshire	TI-36253	2680

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EXAMINER

HUYNH, NAM TRUNG

ART UNIT	PAPER NUMBER
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2617

NOTIFICATION DATE	DELIVERY MODE
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06/05/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/806,881

Applicant(s)

BROOKSHIRE, GREGORY LEE

Examiner

Nam Huynh

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 AND 10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

This office action is in response to amendment filed on 3/5/2007. Of the previously presented claims, claims 1-2, 5, 8, and 19 have been amended and claim 9 has been cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 2004/0174831) in view Dent (US 6,314,504), and in further view of Cromer et al. (US 2004/0002366).

Regarding claims 1, 3, 4, 5, and 7, Yi et al. discloses a method and apparatus for data transmission suitable for a high-performance wireless LAN. In the scope of the invention, a media access controller (MAC) (master/processor) performs data

transmission with a baseband processor (BBP) (slave/LAN adapter) using a serial communication interface. The MAC includes a data path and a control signal path for mutual transmission of data and control signals with the BBP (page 3, paragraph 37). The control path is a transmission path that allows for the reading and writing of the contents of a register provided in the BBP and uses a serial peripheral interface (SPI) (page 3, paragraph 38).

Yi et al. does not explicitly disclose that the slave device is configurable to operate in multiple modes including a direct memory addressing mode and an indirect memory addressing mode. Dent discloses multi-mode memory addressing using variable length (title). In the scope of the invention, new addressing modes are provided to a processor including direct addressing and indirect addressing (column 7, lines 14-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yi et al. to allow the MAC to configure the BBP to operate in a direct memory addressing mode or an indirect memory addressing mode, as taught by Dent, in order to reduce the number of bytes of data communicated, hence reducing power consumption.

The combination of Yi et al. and Dent does not explicitly disclose that fewer bits are serially transferred for reads and writes in the indirect and direct memory addressing modes. Cromer et al. discloses a method and system for conserving battery strength of a mobile node on a wireless local area network (WLAN) (abstract). Cromer teaches transmission that reducing the transmission rate of data, or bits, conserves battery life for a mobile unit (page 3, paragraph 30). Therefore it would have been obvious to one

of ordinary skill in the art at the time the invention was made to modify the combination of Yi et al. and Dent, to transfer fewer bits, as taught by Cromer et al., when configuring the BBP to operate in an indirect memory addressing mode. This modification would further contribute to the conservation of battery life by allowing the MAC to control the BBP with commands of reduced length when needed.

Regarding claim 2, Yi et al. discloses a SPI chip selection signal (SPICS) (initialization command) that is activated to transmit the transmission rate data (read/write command lengths) to the baseband processor (page 5, paragraph 69).

Regarding claim 5, Dent teaches the use of a SETLENGTH instruction that controls how the processor treats data and memory addresses during processing by establishing the accumulator length at any usable length (column 6, lines 21-25). Because of this feature, it is further obvious that the RF subsystem can be configured in different modes of any usable length in the combination of Yi et al. and Dent. Furthermore, it is inherent to one of ordinary skill in the art that commands associated with an indirect memory addressing mode have a shorter length than commands associated with a direct memory addressing mode.

Regarding claim 6, it is further obvious to one of ordinary skill in the art that an indirect addressing mode would conserve processing resources and in turn, conserve power in a battery operated device.

4. Claims 8, 10-12, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US2004/0174831) in view of Cromer et al. (US 2004/0204181).

Regarding claims 8 and 11, Yi et al. discloses a method and apparatus for data transmission suitable for a high-performance wireless LAN. In the scope of the invention, a media access controller (MAC) (processor) performs data transmission with a baseband processor (BBP) (slave) using a serial communication interface. Yi et al. teaches that the MAC and BBP transfer signals to each other containing transmission data length (data length field) (page 3, paragraph 38), a read/write bit (read/write field), and an address pointer field (address field) (page 5, paragraph 70). However, Yi et al. does not explicitly disclose that the MAC and BBP is battery powered and are configurable to communicate in multiple modes being associated with a different read/write length. Cromer et al. discloses a method and system for conserving battery strength of a mobile node on a wireless local area network (WLAN) (abstract). In the scope of the invention, a portable battery supplies power to a mobile network interface card (slave device) and a mobile computer (processor). Cromer teaches transmitting/receive data at a full, half and low symbol rates (multiple modes associated with a different read/write command length) (page 3, paragraph 29, 30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Yi et al. to allow the BBP to be configured by the MAC to transmit/receive data at multiple symbol rates, as taught by Cromer et al., in order to reduce the number of null transmissions and in turn conserve battery power.

Regarding claims 10, 12, 20, and 21, Cromer et al. teaches that the mobile node send/receive at a lower symbol rate (switching to a low power compatible mode that implements a command length having fewer bits) when the battery life of the mobile unit

is less than full (predetermined threshold amount of power/power consumption parameter) (page 3, paragraph 30).

Regarding claim 19, the limitations are rejected as applied to claim 8.

Furthermore, Yi et al. teaches the use of an event signal ("not busy" signal) in the SPI circuit (page 4, paragraph 57).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 13-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Cromer et al. (US 2004/0204181).

Regarding claims 13, 17, and 18, Cromer et al. discloses a method and system for conserving battery strength of a mobile node on a wireless local area network (WLAN) (abstract). In the scope of the invention, a mobile node determines the charge level of a mobile node device (determining if a power consumption parameter of a device exists) (figure 2, item 34). Based on the battery level, a mobile network interface card transmits at either full (read/write commands of non-reduced length), half, or quarter (read/write commands of reduced length) rate of transmission.

Regarding claims 14 and 15, the invention of Cromer et al. is not limited to rate of transmission (page 3, paragraph 29, 30).

Regarding claim 16, the invention of Cromer et al. is intended for WLAN (wireless communication protocol).

Response to Arguments

7. Applicant's arguments with respect to claims 1-8 and 10-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam Huynh whose telephone number is 571-272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH
5/29/07


GEORGE ENG
SUPERVISORY PATENT EXAMINER